W. Edwards Deming	Joseph M. Juran	Phillip B. Crosby	Armand V. Feigenbaum	Kaoru Ishikawa	Walter A. Shewhart
1900 – 1993	1904 -	1926 -	-	1915 – 1989	1891 – 1967
➢ Western Electric Statistician ➢ Advisor, Author, Teacher & Consultant ➢ ASQC Honorary Member in 1970 ➢ Visited Japan in the 1950's; Led the Japanese Quality Movement; and had an award names after him for contributing to Japan's success ➢ Founder, Third Wave of the Industrial Revolution ➢ Bureau of Census Advisor in Population Sampling	➢ Joined Western Electric as an Industrial Engineer ➢ Developed the Western Electric Statistical Quality Control Handbook	➢ Vice President, Quality at International Telephone & Telegraph (ITT)	➢ President/CEO, General Systems Company ➢ Founder, International Academy for Quality ➢ ASQC President (1961-1963) ➢ U.S. Army Materiel Command Advisor of Quality Assurance	➢ Leader of the Japanese Quality Movement ➢ Developed the Japanese Quality Strategy	➢ Western Electric & Bell Telephone Engineer ➢ Father of Statistical Quality Control ➢ ASQC's first Honorary Member in 1947
➢ Focused on product improvement and service conformance by reducing uncertainty and manufacturing processes (variation) ➢ Focused on frequency as a controlling factor: ➢ Plan ➢ Do ➢ **Study** ➢ Act	➢ Focused on "not proposing" a major cultural change, but improving quality by working within the system. ➢ Invited to Japan in 1954 by JUSE (Union of Japanese Scientist and Engineers)	➢ Focused on the 'absolutes' of quality and the basic elements of improvement	➢ Stated that quality was based on three major contributions ➢ Believed that quality cost is related to prevention, approval, and internal/external failure	➢ Focused on the principal tools of Quality Improvement ➢ Stated that there are two principal tools; "two wheels of the same cart" – Standardization & Quality Control	➢ Focused on frequency as a controlling factor: ➢ Plan ➢ Do ➢ **Check** ➢ Act ➢ Developed the Control Chart
➢ Advocated an extensive use of statistics & control charts	➢ Contented that *throughout any organization* there are three different languages: 1. Upper management speaks dollars; 2. Middle management	➢ Strongly believed that to achieve quality, organizations must be viewed three separate ways: 1. Function: tasks or groups of tasks that are to be performed;	➢ Stated that the three major contributions of quality are: 1. Promotion of Quality Ethics; 2. Development of the Concept of Total Quality and Control; and	➢ Strongly advocated that "cause and effect" diagrams provide a true representation of organizational impacts and procedures. ➢ Developed the Fishbone or Ishikawa	

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	speaks things and dollars; and 3. Lower management (or workers) speaks things.	2. Process: set of steps, policies, and procedures that define the 'how, and what' is to be performed or expected; and 3. Ideology: the set of values or beliefs that guide an organization in the establishment of its mission, process, & function.	3. Development of a Quality Cost Classification System	Diagram	
➢ Identified two sources of variation: ➢ Common Cause ➢ Special Cause	➢ Identified four "Fitness of Quality" 1. Quality of Design: Market Research, Product & Concept 2. Quality of Conformance: Management, Manpower & Technology 3. Availability: Reliability, Maintainability & Logistical Support 4. Full Service: Promptness, Competence & Integrity	➢ Identified "Five Absolutes of Quality" 1. Quality means conformance to requirements, not elegance 2. There is no such thing as a "quality problem" 3. There is no such thing as the economics of quality; it is always cheaper to do the job right the first time 4. The only performance measurement is the cost of quality, and 5. The only performance standard is "zero defects"	➢ Identified three Aspects of Total Quality Control 1. Enlist all parts of a corporation 2. Provide an effective system for integrating the quality-development, quality-maintenance, and quality-improvement efforts 3. Enable marketing, engineering, production, and service at the most economical levels which allow for full customer satisfaction	➢ Identified "Ten Aspects of Quality 1. Study quality improvement ahead of anyone else 2. Establish policies toward promoting quality improvement 3. Specify priorities for implementing quality improvement and short & long-term goals 4. Assume a leadership role in making quality improvement happen 5. Provide a means for educating people 6. Check to see if quality improvement is implemented as planned 7. Make clear the responsibility of top management 8. Establish a system of cross-functional management 9. Drive home the notion	➢ Identified two sources of variation: ➢ Chance Cause ➢ Assignable Cause

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				that outputs from processes are inputs to customers 10. Provide leadership towards making "breakthrough" happen	
➢ Identified the 14 Points of Management – which cannot be viewed in isolation or selectivity ➢ Identified "Seven Deadly Sins" of Management 1. Lack of Constancy of Purpose 2. Emphasis on short-term profits 3. Evaluation of performance, merit ratings, or annual reviews of performance 4. Mobility of Management 5. Running a company on visible figures alone 6. Excessive medical costs 7. Excessive warranty costs	➢ Pursued quality on two levels: 1. Firms must achieve high quality products; and 2. Each individual must achieve individually high quality	➢ 14-Point Quality Improvement Program 1. Management Commitment 2. Quality Improvement Teams 3. Quality Measurements 4. Cost of Quality Evaluation 5. Quality Awareness 6. Corrective Action 7. Ad-hoc committees for zero-defects 8. Supervisor Training 9. Zero-defects Day 10. Goal Setting 11. Error Cause Removal 12. Recognition 13. Quality Councils 14. Do It Over Again			
	➢ Developed the Quality Trilogy: 1. Quality Planning: preparing to meet quality goals 2. Quality Control: process for meeting goals during operations 3. Quality Improvement: Breaking through to achieve unprecedented levels of performance.	➢ Four Areas to Reduce Cycle Time 1. Diagnosis of cycle time 2. Diagnosis of the process 3. Diagnosis of major influences 4. Identification and implementation of remedies to reduce cycle time			

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Silent about how to implement his model other than the 14 Points of Management".	Focused his approach on the improvement of specific processes with an explicit implementation process called "Trilogy" and Nine Responsibilities of Upper Management..	➢ Cycle Time Reduction Methodology 1. Define a process 2. List all activities 3. Flowchart the process 4. List the elapsed time for each activity 5. Identify non-value adding tasks 6. Eliminate all possible non-value-adding tasks	Identified 40 Steps to Quality Improvement		

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